

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claims 1, 2, 4, 5, 7-10, 13, 15, and 26-46 are cancelled, without prejudice or disclaimer thereof, and claims 47-85 are added to the application. New claims 47-85, which have been added to eliminate the multiple claim dependencies in the original claims and to add punctuation where appropriate to more clearly state the invention, correspond to the subject matter of the cancelled claims. No new matter is being added. For the Examiner's convenience, the following chart provides the original claim and the corresponding new claim(s).

Original Claim	Corresponding New Claim(s)
1	47
2	48
4	49, 65
5	50
7	51, 70
8	52
9	53
10	54, 66, 71
13	55, 67, 72
15	56
29	57
30	58
31	59
32	60
33	61
34	62
26	63, 68, 73
27	64
28	69
35	74

Original Claim	Corresponding New Claim(s)
36	75
37	76
38	77
39	78
40	79
41	80
42	81
43	82
44	83
45	84
46	85

Because the amendments do not introduce new matter, entry thereof by the Examiner is respectfully requested. After amending the claims as set forth above, claims 47-85 are now pending.

I. Claim Rejections – 35 U.S.C. § 112, first paragraph – Enablement

Claims 1, 2, 4, 5, 7-10, 13, 15, and 26-46 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement. The Examiner alleges that “[t]he fact that not every gene that is targeted by this tet system will result in an animal with a phenotype, is the issue [that] needs to be addressed, in order for any animal to be encompassed by the claims.” Office Action at 6. According to the examiner, the claims require a “phenotype,” because a phenotype is “inherent to the animal.” Office Action at 5. The examiner then concludes that the claims lack enablement because “the claims still encompass animals made with the tet system that have no discernable biological mechanism [*i.e.*, phenotype] to study.” Office Action at 6. If the claims do not require a phenotype, the Examiner posits that the claims would lack utility, because “no comparative studies could be carried out between a wild type animal and mutant.” *Id.* Applicants respectfully traverse this ground of rejection.

As discussed below, the evidence and explanation of record establishes that one of ordinary skill in the art could practice the full scope of the claimed invention using only routine experimentation.

A Enablement does not require that the transgenic animal exhibit any particular phenotype

While not acquiescing in the conclusion that transgenic animals exhibiting no phenotype lack enablement, enablement of the present claims does not require a skilled artisan to be able to make and use a transgenic animal exhibiting a phenotype. Instead, “[t]he invention that one skilled in the art must be enabled to make and use is that defined by the claims(s)...” MPEP § 2164 (emphasis added). The claims simply recite that “the transgene is expressed in cells of the animal at a level sufficient to produce amounts of the fusion protein that are sufficient to inhibit transcription of the *tet* operator-linked gene.” Thus, the enablement of the claimed invention is properly assessed based on the claim language and not on features of transgenic animals deemed “inherent” by the Examiner. Accordingly, enablement of the claimed invention does not require that the claimed transgenic animals exhibit a phenotype.

B. Transgenic animals lacking a phenotype possess utility

Contrary to the Examiner’s contentions, one of skill in the art would be able to make and use transgenic animals lacking a phenotype. For example, transgenic animals can be used for “large scale production of a protein of interest in [transgenic] animals....” Application at 50, lines 18-19. Such a protein of interest can be a therapeutic protein for example, designed to be expressed in the milk of the transgenic animal. *See* Application at 50, lines 26-35. Despite producing the protein of interest, the transgenic animal does not necessarily exhibit a “phenotype” associate with the protein of interest. Thus, one of skill in the art can make and use a transgenic animal that does not necessarily exhibit a phenotype.

C. The specification provides sufficient guidance to allow a skilled artisan to make the claimed “non-human transgenic animal” without undue experimentation

The specification contains extensive guidance of how to prepare a transgenic animal comprising a transgene, as claimed. For example, the specification describes in detail how to make and use transactivator fusion proteins and how to regulate transcription using the

transactivator fusion proteins. *See e.g.*, Application at page 6, line 15 – page 7, line 13. The specification also describes the construction and uses of transgenic animals. *See e.g.*, Application at page 17, line 28 – page 18, line 23; page 50, line 17 – page 51 – line 14.

These teachings are further validated by actual examples. Application at 53-74. The examples include the construction of a transgenic mouse which comprises a tTA regulatory system, wherein the gene of interest is a luciferase reporter gene. Application at page 61, line 20 – page 63, line 31. Figure 12 shows that the transgenic mice carrying the tTA and tet operator-linked luciferase gene have decreased or increased luciferase activity based on the presence of absence of tetracycline. Thus, the specification contains extensive description of how to make and use the claimed invention and is supported by actual working examples.

For at least these reasons, a skilled artisan would be able to practice the claimed invention at the time of filing without undue experimentation. Accordingly, Applicants respectfully request reconsideration and withdrawal of this ground of rejection against claims 1, 2, 4, 5, 7-10, 13, 15, and 26-46 under 35 U.S.C. § 112, first paragraph.

II. Claim Rejections – 35 U.S.C. § 112, first paragraph – Written Description

Claims 1, 2, 4, 5, 7-10, 13, 15, and 26-46 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking written description support. According to the examiner, “[t]he primary issue is that not all genes will result in a phenotype and not all genes will predictably result in a phenotype....” Office action at 10. The examiner argues that “the specification does not generally teach a skilled artisan mice wherein the tetO-linked gene is any gene. The ramification of this is that the specification must then account for every gene under tetO control and the subsequent phenotype that ensues...” to satisfy the written description requirement. Office action at 10. Applicants respectfully traverse this ground of rejection.

A. The claimed invention does not require any phenotype

The written description rejection is founded on the misapprehension that the claimed invention requires some phenotype. As discussed above in Section I(A), the claimed

invention does not require any phenotype. Satisfaction of the written description requirement, like the enablement requirement, is founded on the claim language. *See* MPEP 2163 (“[A] patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.” (emphasis added)). Thus, Applicants need not provide written description support for phenotypes of the claimed transgenic animals because phenotypes are not claimed.

B. Genes of interest that can be regulated in the claimed transgenic animal need not be specifically described to satisfy the written description requirement

The claimed invention is directed to transgenic animals comprising a gene of interest under the control of the recited regulatory mechanism. The specific gene of interest selected is not important. Instead, it is the regulatory mechanism that is central to the claimed invention. The recited regulatory system allows the production of transgenic animals with a gene of interest that can be highly regulated.

Applicants do not need to list each and every gene of interest that could be used in the claimed invention to satisfy the written description requirement because genes of interest are well-known in the art. *See Amgen, Inc. v. Hoechst Marion Roussell, Inc.*, 314 F.3d, 1313, 1332 (Fed. Cir. 2003) (holding that members of a well-known genus need not be exhaustively listed to satisfy the written description requirement for claims reciting the genus). One of skill in the art would be able to readily select a gene of interest to use in the claimed invention based on the specific application. In addition, the specification lists numerous genes of interest that could be used. *See e.g.*, Application at page 33, lines 33-39; Application at page 45, line 45 – page 46, line 29. Thus, genes of interest were well-known in the art at the time of filing, and the specification lists a representative number of genes of interest.

For at least these reasons, a skilled artisan would understand Applicants to be in possession of the claimed invention at the time of filing. Accordingly, Applicants respectfully request reconsideration and withdrawal of this ground of rejection against claims 1, 2, 4, 5, 7-10, 13, 15, and 26-46 under 35 U.S.C. § 112, first paragraph.

CONCLUSION

The present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date June 28, 2005

By Michele M. Simkin

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 672-5538
Facsimile: (202) 672-5399

Michele M. Simkin
Attorney for Applicants
Registration No. 34,717